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ABSTRACT

A four-week course in reading comprehension which attempts to provide students with a repertoire of techniques to use when they encounter difficult reading passages is described in this paper. At the end of the course, students must demonstrate their ability to skim a short reading passage and write a one-sentence summary of its central theme and main ideas, as well as to outline the passage so that relevant details are organized to reflect the original. The course consists of two parts. In the first part, the teaching of various methods of attacking study reading is discussed. Students are taught to read for the main idea, locate topic sentences, distinguish between general and specific statements, read for paragraph structure, and practice writing concise summaries. The second part of the course consists of problem solving with difficult reading materials in order to give the students experience. The teacher guides the learner through the problem-solving process by helping the learner identify the problem and by suggesting bases for possible solutions. It is concluded that teaching problem solving develops human potential and enables individuals to maximize their skills and resources so that they can establish their independence and fulfill themselves in relation to their environment. (TS)

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READING DIFFICULT WRITING IS A PROBLEM SOLVING PROCESS

Jo Ann Cope

The University of Texas at Austin

At the Reading and Study Skills Laboratory, a voluntary noncredit student service of the University of Texas at Austin, we offer essentially two programs through which a student may devote time to improving his reading comprehension. He may enroll in a four week long class, or he may work in our self-help laboratory under the guidance of an instructor and a lab advisor (a peer tutor) for an indefinite time. Two or three times as many students enroll in classes as choose the self-help lab. Since the latter requires considerable self-motivation, we tend to counsel students in the direction of the classes.

Students in our Study Reading (comprehension) classes are typical of the whole RASSL population in a number of ways. There are about six men to every four women; they are taking their first RASSL program, having been referred by their friends; most of them come from the Colleges of Natural Sciences, Social and Behavioral Sciences, and Business; about 35 to 40 percent say they are doing okay academically but want to become more efficient in their schoolwork; about the same percentage are transfer students. But there are several differences which distinguish our Study Reading population. They are markedly younger: almost half are freshmen (compared with the RASSL average of one quarter freshmen), 75% are in their first two years of school, and 65% are in their first semester at U.T. This may be in part because an unusually larger percentage of them cite Freshman Orientation as their referral, and again we often counsel freshmen to take classes in either Study Techniques or Study Reading. More significantly, a larger number of them

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report that English is their second language, suggesting a larger enrollment in these classes of chicanos and foreign students. A few more of them say they are concerned about their grades; their grade point averages at U.T. are lower than those of the whole RASSL population. Median scores of RASSL students on the Scholastic Aptitude Test are higher than the median scores of U.T. freshmen; but those of our Study Reading students are lower than both.

For the last several years, we at RASSL have had a problem with the teaching of reading comprehension. These students come closest within our population to being those in academic trouble. The bulk of our instruction was carried on in four week classes. What meaningful help could we offer in such a short time? Without clear-cut goals for these students, the task of improving their reading comprehension seemed overwhelming. Without goals we had no clear idea how to measure change in them. We had ceased to use a short multiple-choice pre-post test in which none of us had confidence, but we had nothing with which to replace it. Another significant dimension of the problem was what could be described as a lack of conceptual base around which to center the techniques we were using. The value of our methods---locating the topic sentence, analyzing paragraphs for structure---were not always immediately apparent to the students. We were in the same position as an "outside expert" in a medical model:

> ...the patient is sometimes unwilling to believe the diagnosis or accept the prescription offered by the consultant....[if] the doctor...has not built up a common diagnostic frame of reference with the patient...a communication gulf will arise which will make the prescription seem irrelevant and/or unpalatable. (12:7)

And so we were aware, in a general way, of the problem. We knew we were floundering, dissatisfied. We began a sequence of actions to free ourselves from such discomfort. We formed a task force on comprehension to come up with ideas. We considered revising our old diagnostic test. We brainstormed about alternative evaluation methods. We decided to change the textbook. We discussed the nature of our population and their needs. We browsed through texts and journals for new ideas.

The Problem Solving Process

The answer which I have found for myself to this dilemma had its origin in a variety of serendipitous occurrences which are the result of being a lively part of a vast state university filled with exciting ideas. RASSL is a part of the Counseling and Psychological Services Center at U.T., and from them we learned of the concept of problem solving as a therapeutic behavior modification technique. One member of our staff realized that much of what we do is help students solve academic problems. That realization led to the creation of a Focus Group, offered regularly by RASSL and the Student Union, designed to teach students the process through which they can solve their own problems. From the Counseling Center we also learned about organizational development and the work of process consultants (see Ann Faulkner's paper in the WCRA Proceedings, 1974). From the College of Engineering, which houses some of the most innovative teaching on campus, we learned about Fred Keller's Personalized System of Instruction and its dependence on specific behavioral objectives à la Mager. A doctoral candidate in Educational Psychology who had heard we were into problem solving dropped by to see if we could help him with his dissertation project, and gave us a lengthy article on problem solving. About this time, some designers and architects in California who were trying to sell a book sent a copy to the Provost, who puzzled over it and then sent it to us. It was called The Universal Traveler: A Companion for Those on Problem-Solving Journeys and a Soft-Systems Guidebook to the Process of Design (10); it presented graphically and delightfully the problem solving process and much information on techniques for teaching creativity. We have used brainstorming at RASSL since 1971 as a mode of problem solving and program development, ever since one of our staff ran across a reference to it accidentally in a journal. All of these sources---therapy, consultation, design---played their part in helping me realize that the problem solving process could be helpful to students frustrated in their reading.

It is interesting to note that my introduction to this concept did not come through the field of education. There have been some controlled studies validating significantly greater gains in learning among students taught by a problem solving method rather than traditional teaching methods,

and there are many reports of classroom experiences, but information about the concept has not been readily available in an easily understandable form to teachers. (7:259; 5:v)

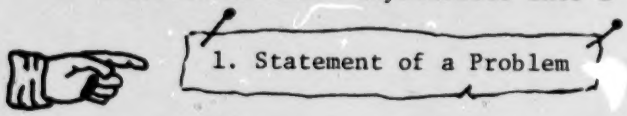
How people think, and more specifically how they solve problems, has fascinated philosophers for centuries. During the last few decades, this issue has been explored from essentially two different points of view. One is experimental psychology, where there is a swelling interest in research into higher human mental processes, including the nature of creativity. Such research isolates requisite personality and environmental characteristics and significant variables. Meanwhile, business and industry in its need for new ideas has been examining the processes of creative individuals and distilling their essence, much as Evelyn Wood did with speed reading, in order to teach creativity to their employees. So the most practical and applicable ideas, the efficacy of which are constantly proven by increased productivity (4:76-77), come from business and industry.

Just what is the sequence an individual goes through in order to solve a problem? There is general agreement on several stages which may occur in a variety of sequences and modifications. Dewey (quoted in 4:16) generalized these to two: an initial stage of doubt, perplexity, and mental difficulty, followed by searching and inquiring after information to resolve the doubt. G. Wallas (quoted in 4:15) arranged the same steps into four which are strikingly like the scientific method: preparation (where the problem is clarified and defined and information gathered); incubation (an unconscious time of creative leisure); inspiration (an "aha!" or "Eureka!" experience); and verification (checking the solution). Alex Osborn (quoted in 4:17) elaborated these to ten steps and taught the importance of distinguishing between the generation of ideas, which is a free and uninhibited creative act, and the classification or evaluation of ideas, a critical act. Borrowing from D'Zurilla (6), we have chosen a five-step model (see illustration, "A Model for Problem Solving") which describes first becoming aware that you have a problem, then defining and analyzing it, generating alternatives, weighing them to choose a solution, and testing the effectiveness of the solution.

Looking back on the process through which we went to resolve the problem of teaching reading comprehension at RASSL, we were certainly aware that a problem existed; but could we, perhaps, have defined it more clearly? And in so doing could we perhaps have reached a resolution more

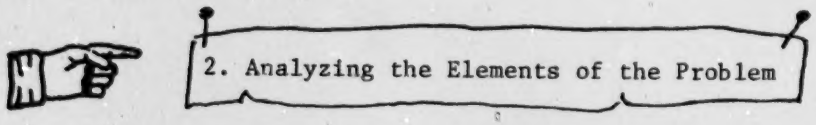
A MODEL FOR PROBLEM SOLVING

Learn to <u>use</u> your feelings by letting your uncomfortableness crystallize into a



"I don't understand how to do this assignment..."

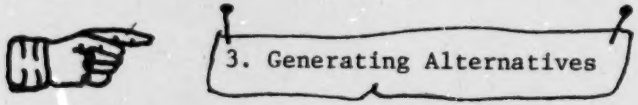
Make sure you understand the statement of the problem you have made by



and seeing that they are clear to you.

"I seem to have to define A, illustrate B and demonstrate how A and B are used..."

Start thinking of ways to solve the problem by

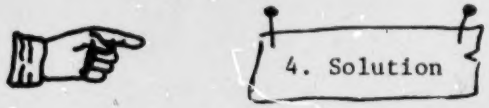


"I know where I can read some more about A and I can ask Sue something about B..."

Think of as <u>many</u> alternatives as possible during this step and <u>don't</u> judge or reject them (evaluation comes later).

<u>Now</u> evaluate and weigh the alternatives, thinking about the most effective long and short-term consequences.

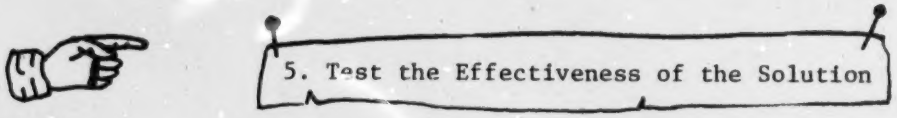
Then find your



and try it out by implementing your ideas with action.

"I'll write this out and see how it looks..."

Finally...



by...

---measuring your progress

---testing your solution against a model situation

---asking questions like "How far did I go?"

---"How well did I do?"

---"Did I accomplish what I wanted to to my satisfaction?"

---Getting feedback from others.

efficiently or quickly? One writer points out that

> An ordinary person almost never approaches a problem situation systematically and exhaustively unless he has been specifically educated to do so. It is much more natural for him to visualize what is and what ought to be and to focus on the gap between them than to visualize some huge set of alternative possibilities through which he must search. (6:118)

Most people solve problems intuitively; but one may ask whether the best solutions are always found. If he with the problem has not achieved sufficient distance from it, if he has not thought of enough alternatives--research shows that the more ideas one has, the greater the chance that some are good!---(6:115), if he takes an inefficiently long time to solve it, or if he solves it too impulsively by taking the first available response, or if he avoids the problem in despair, in all these instances he is functioning with limited resources. Conventional responses may work in familiar situations, but novel and complex situations may make habitual responses inadequate. This inadequacy is often given as a definition of a problem. (11: 71; 4:12-13)

Bloom (2) did a fascinating study on the thought processes of college students working on academic test problems. Poor achievers (students with D's and F's) showed patterns of inefficient problem solving. In addition to a lack of knowledge of terms or background, they made many reading errors: they reread, concentrated poorly, misread, read hastily and incompletely. They lacked confidence, telling themselves they could not solve the problem, labeling it "the kind of thing I never could do." They often imposed their own prejudices and desires on the problems. They evidenced no systematic approach but rather drifted aimlessly, rereading without purpose, never formulating or losing sight of any goal. Bloom succeeded in teaching problem solving techniques to low achievers. The problems he identified are remarkably similar to those we address in the teaching of reading comprehension.

Course Description

Part of the process of designing a meaningful four week course in reading comprehension included writing a course description.

Study Reading is a 4-week course in reading comprehension which attempts to provide you with a repertoire of techniques to use when you encounter difficult reading passages, to help you understand those passages.
We will discuss how to recognize that you are having difficulty in comprehending what you read. You will be shown a system for organizing your study reading which consists of skimming for main ideas, analyzing for more detailed understanding, and self-testing which enables you to remember better what you read.
You will be given instruction and practice in determining what's important, recognizing significant details, and organizing them using various note-taking systems: text-marking, outlining, and writing summaries.
We will spend a brief amount of time on what to do when you encounter new vocabulary.
Classwork will mostly consist of meeting obstacles to understanding as they are encountered in reading passages of varying difficulty.

From this naturally followed behavioral objectives:

At the end of this course, the student will demonstrate his ability to

1) skim a short reading passage and write a one-sentence summary of its central theme and main ideas, and
2) outline the passage such that relevant details are organized to reflect the original.

The student's summary sentence and outline will be compared to a model. If his work, in his and the instructor's opinions, approaches that of the model, he will be considered to have completed the course successfully. Otherwise, he may be urged to continue working on comprehension skills in the self-help lab.

These gave me a framework within which I could share with the class on the first day my expectations for them and elicit what they wanted of the class.

The coursework consists of two parts. First is the teaching of various methods of attacking their study reading. Teaching them our equivalent of SQ3R gives them a specific technique which they can practice at home and which provides immediate release from many of the pressures which burden them. Then we move into instruction in the usual comprehension tools---reading for the main idea, locating topic sentences, distinguishing between general and specific statements, reading for paragraph structure, text-marking. I require of them constant practice in writing concise summaries. So the first part of the course is the teaching of specific coping skills with suggestions about how they can apply these in their own work.

At some point in the class, often on the first day and recapitulated later, I describe to them the frustration threshold in reading and ask them how they know when they've encountered it. Not all their reading is difficult, I remind them; much is within their range in terms of vocabulary, syntax, background, and innate difficulty of ideas. But how do know when they are being asked to read beyond their limits? I help them list feelings and behaviors---sleepiness, poor concentration, inability to recall, rereading, frustration, defeat, giving up, panic, anxiety---all of which may be clues to a problem in reading. The question is, then, what to do when they reach this point.

The last two weeks of the course consist of problem solving with difficult reading materials in order to provide them with guided experience in answering that question. I've done no readability studies on materials I use, but excerpts from the genetics text presently in use at U.T., John Stuart Mill, articles from journals of sociology and psychology are all well into the frustration levels of most of these students. Specifically I direct their reading of a given passage. I ask them to preview or skim it and then to ascertain whether they anticipate any difficulty. I may ask them to review their background in the subject, or to rank the article on a scale of one to ten according to its interest or difficulty for them. At this early stage in reading, lack of interest, sleepiness, boredom, difficulty concentrating may be problems with the reading task. At this point I can either provide answers or, preferably and in keeping with the problem solving model, urge a brainstorming session about possible responses: what have they done in the past to cope? what new could they try?

Then I have them read the passage in more detail, instructing them to watch their feelings and responses for symptoms of difficulty. I ask them to attune themselves to trouble spots and once they're located to define the specific nature of the problem. A student puzzling over John Stuart Mill might discover that there are no examples, that a paragraph consists largely of generalization. Once the problem is defined, again we can brainstorm ways of resolving that difficulty. It is important to consider throughout the emotional effects of frustrating reading: some student may be defeated or confused by vocabulary terms he doesn't know because he is in the habit of telling himself that he can't understand unless he knows all the words.

The teacher's role here is quite complex. There is a delicate balance to be maintained between giving too much information---doing their work for them, which robs them of the opportunity of learning their own resourcefulness---and not giving enough assistance, which may be very frustrating. One must be able to endure long silences and high frustration levels as students ponder over problems. How much assistanceto give is one of the issues under examination through experimentation in problem solving; some help and guidance havebeen considered essential to effective learning (3). The teacher becomes here a process consultant. He understands that the learner

> ...must learn to see the problem for himself, to share in the diagnosis, and to be actively involved in generating a remedy. The process consultant may play a key role in helping to sharpen the diagnosis and in providing alternative remedies which may not have occurred to the client. But he encourages the client to make the ultimate decision as to what remedy to apply. Again, the consultant does this on the assumption that if he teaches the client to diagnose and remedy situations, problems will be solved much more permanently and the client will be able to solve new problems as they arise. (12:7)

The teacher, like the process consultant, guides the learner through the process, which may on occasion be painful. He helps the learner identify the problem; he slows down the tendency to impulsive behavior; he urges the unnatural behavior of thinking up a variety of solutions and not making judgments while doing so; he suggests bases for possible choice; and he reassures the learner that to do all this is not a waste of time. (12:46-50)

A variety of problems and questions remain to be resolved concerning the use of a problem solving approach to teaching reading comprehension. Is there value in instructing the students overtly in the principles of problem solving, or can they incorporate the process into their behavior without it? Perhaps the greatest danger is the temptation to solve the students' problems for them. The question of how to measure success in problem solving, synonymous here with reading comprehension, remains open. At present I am content with the value of written summaries and comparison with a model, since there is a deep pessimism at RASS concerning conventional reading tests and their efficacy. New directions include rewriting the course objectives to better measure students' learning of the problem solving model; designing a daily record of problematic situations so students can keep a diary

outside of class of problematic reading situations. Students have expressed the desire for greater individualization within the class, longer classes (a constant request) and problem solving in class using their own books.

Conclusion

One writer has complained that

> Many stimulating reports on problem solving experiences at all grade levels are available, but commonly these represent a teacher's after-view of a new but essentially uncontrolled situation. While such expositions may lead readers to launch their own trials with effective thinking procedures, they provide very limited evidence as to the value of the problems approach as measured against other means of instruction and curricular organization. (7:263)

True. But a good idea deserves voicing, and frequent voicing if necessary. The problems approach to teaching does work well. And there is a symbiotic relationship between excitement and exploration, so maybe another attestation to its value will invite experiments into why it works. One writer points out that the technological revolution in education may well change the teacher's role entirely, from one of dispensing content to that of a process consultant as described above, who attends to the learning process and problems that inhibit it. (9:1)Most notably, the problems approach clarifies the role of a teacher as one whose responsibility it is to help create independent and resourceful learners. Problem solving

> is a way of speaking of the quality of the transactions an individual has with his environment, and particularly a way of speaking about the competence an individual displays in dealing with an environment which involves many 'novel' (or variant) situations. (14:1)

So a prime reason for teaching problem solving is to develop human potential, to enable an individual to maximize his skills and his resources so that he can establish his independence and fulfill himself in relation to his environment. This paper is a contribution to the literature of excitement.

for -

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